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(71) Applicant  
Anthony John Sharp  
Spinney Lane  
Aylesham

Kent CT3 3EF

(72) Inventor

Anthony John Sharp

(74) Agents

Edward Evans and Co  
Chancery House  
53-64 Chancery Lane  
London WC2A 1SD

(54) Two-part moulded container

(57) A container, particularly for soft fruit and mushrooms, comprises an upper part (2) and a lower part (1), each having a central horizontal web and side walls (9,4) extending respectively downwardly and upwardly therefrom, the side walls of each part having a rigidifying rim portion (10,5), the rim portion (10) of one said part (2) releasably engaging within the rim portion (5) of the other part to close the container, the rim portions of both

parts being above an imaginary horizontal median plane between the central horizontal webs of the two parts.

Preferably at least the upper part of the container is transparent.

Preferably at least 20% of the height of the container is above the rim of the lower part.

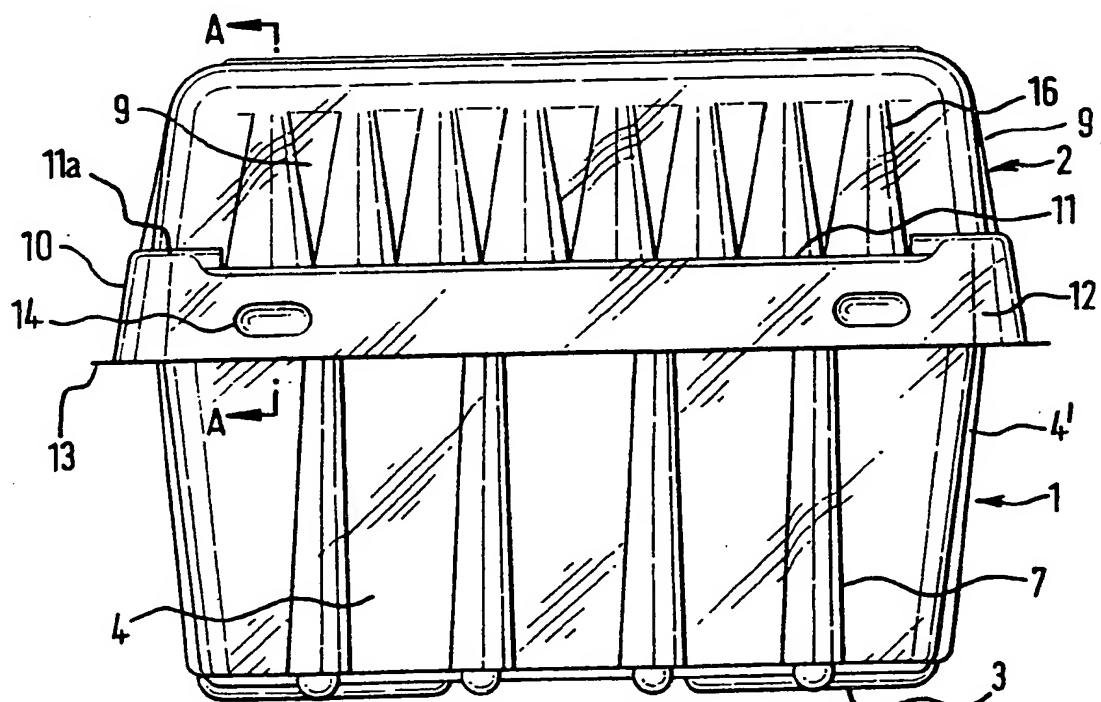


FIG.1.

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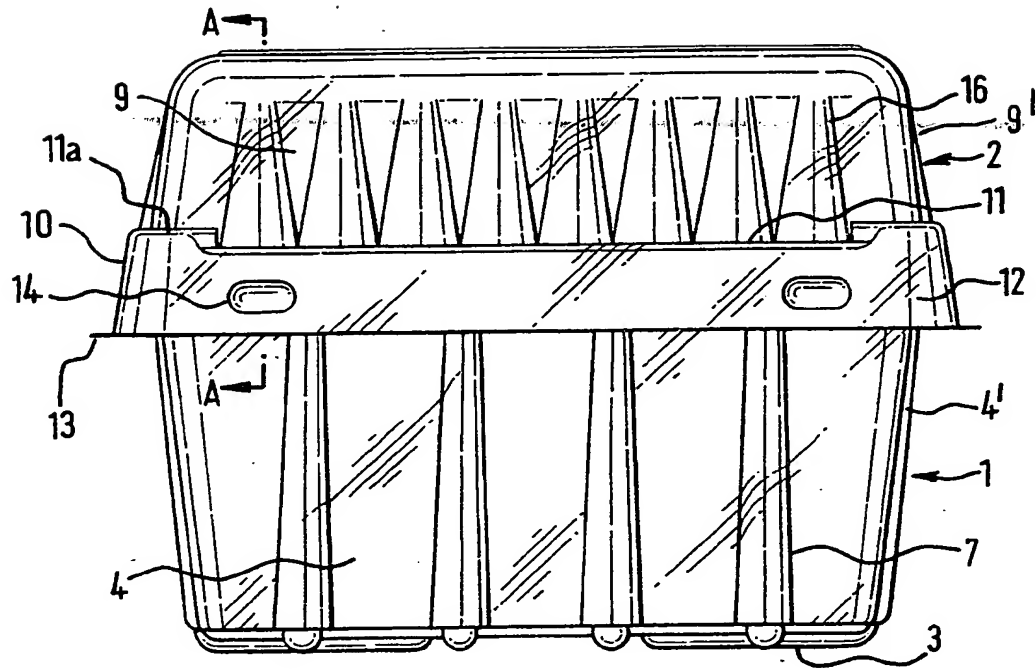


FIG. 1.

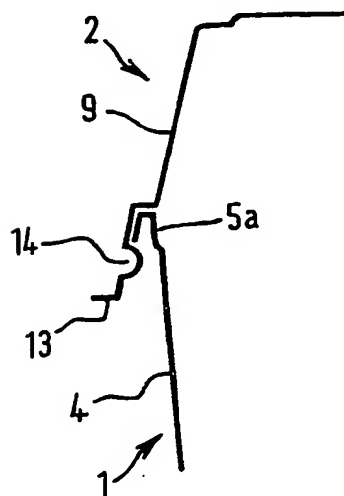


FIG. 1A.

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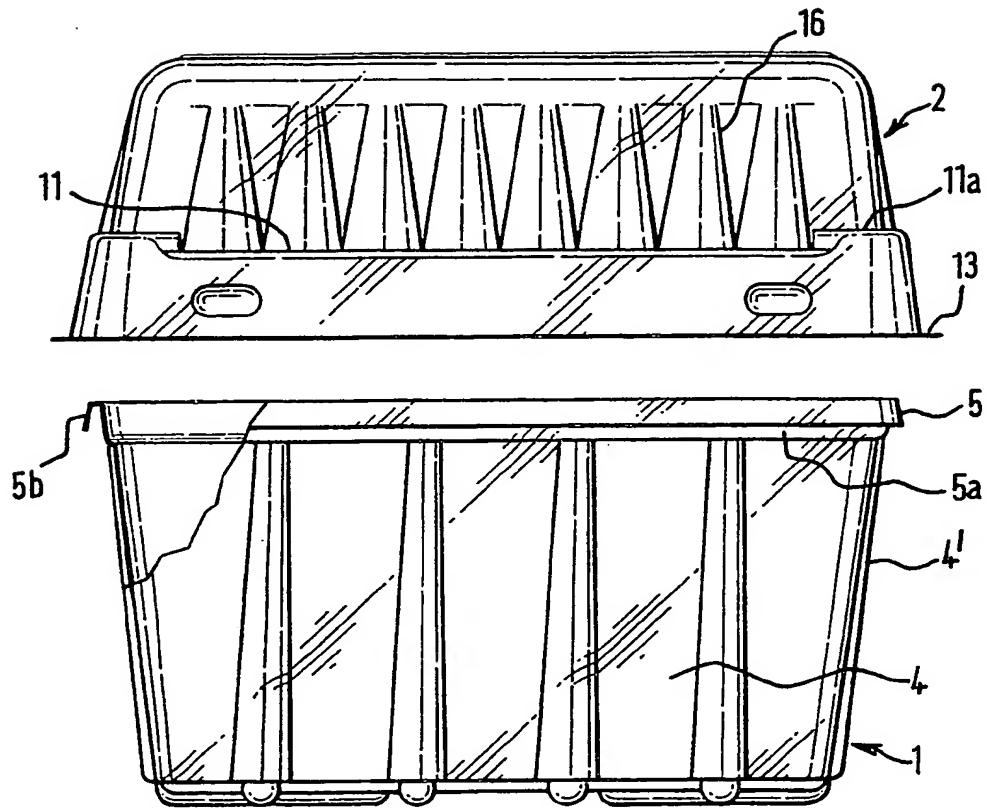


FIG. 2.

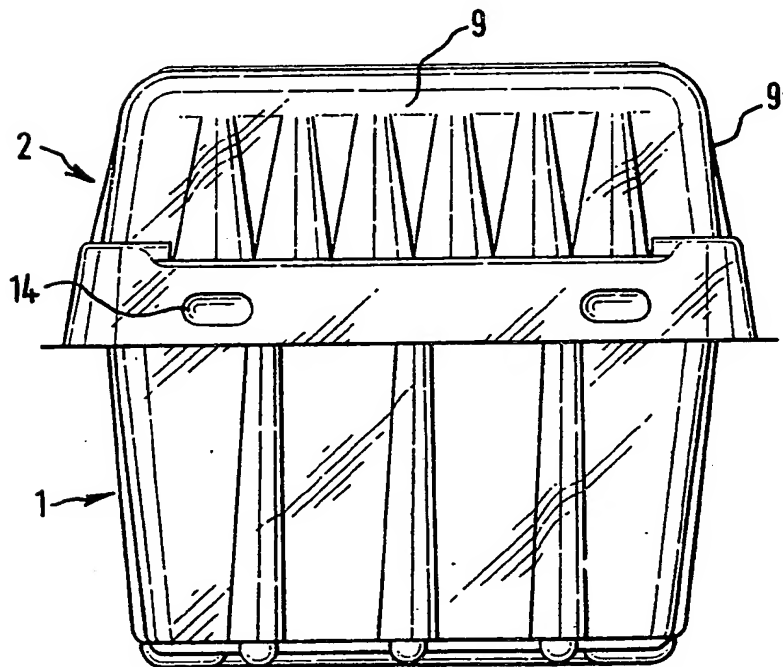


FIG. 3.

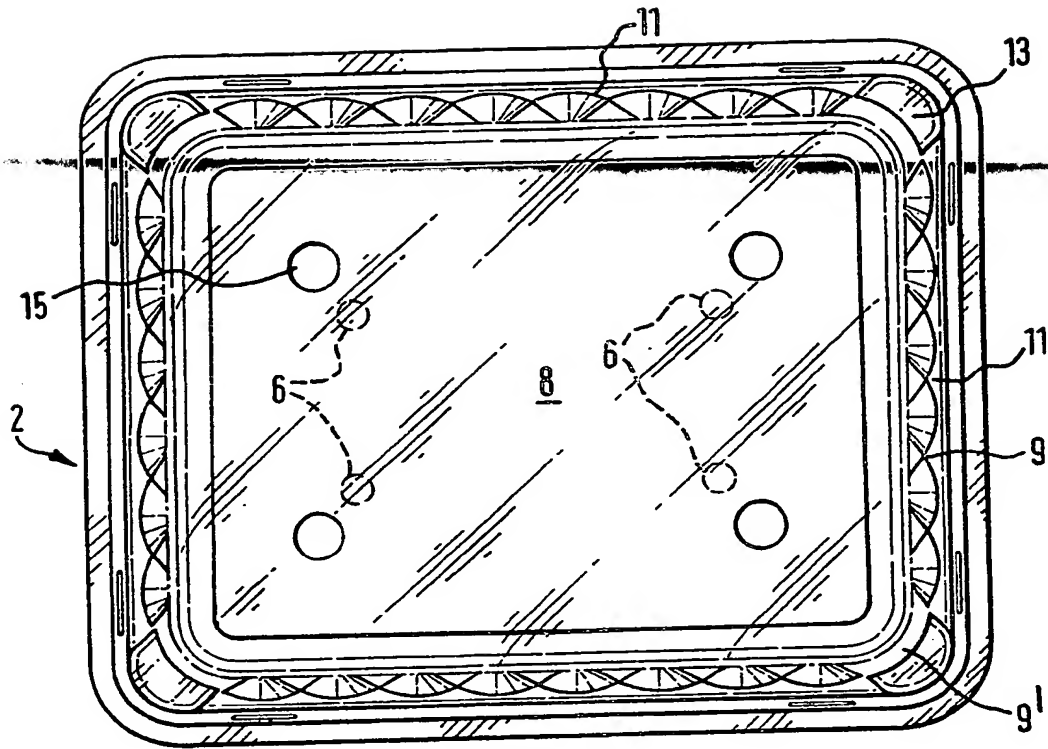


FIG. 4.

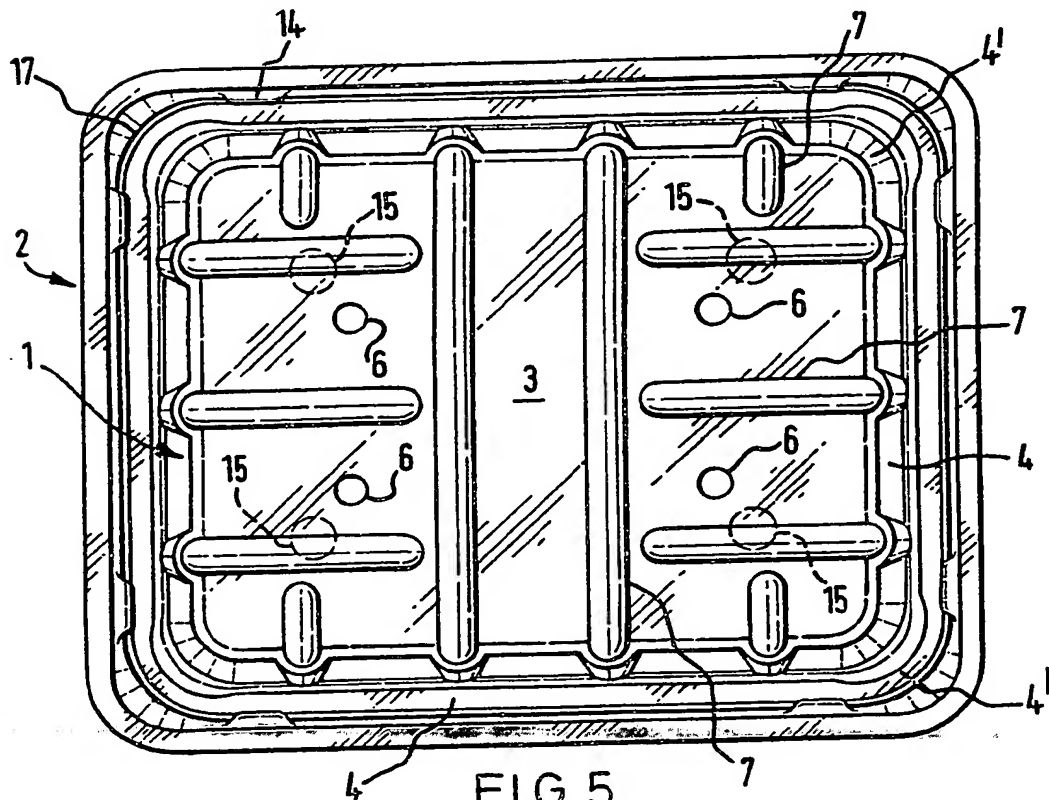


FIG. 5.

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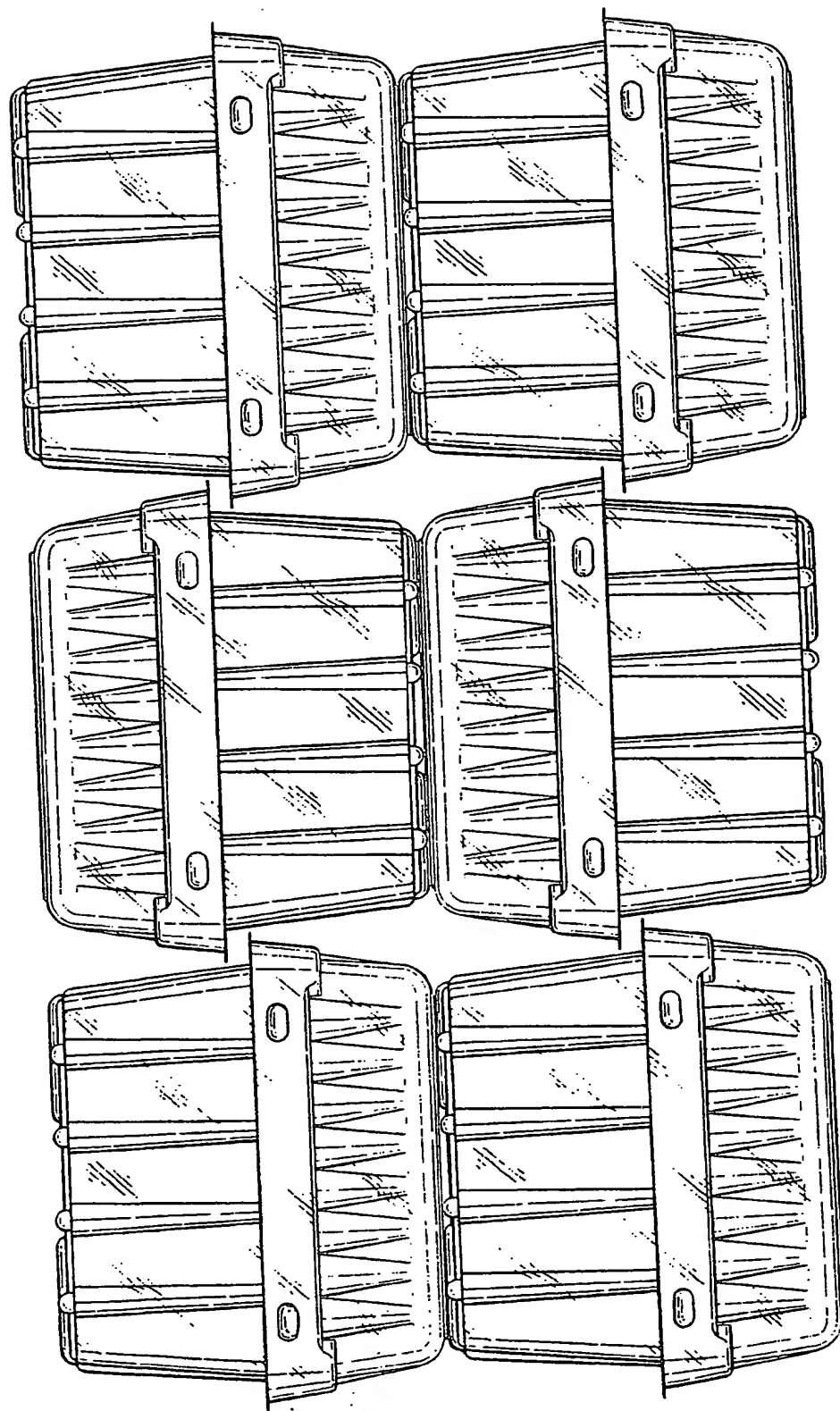


FIG. 6.



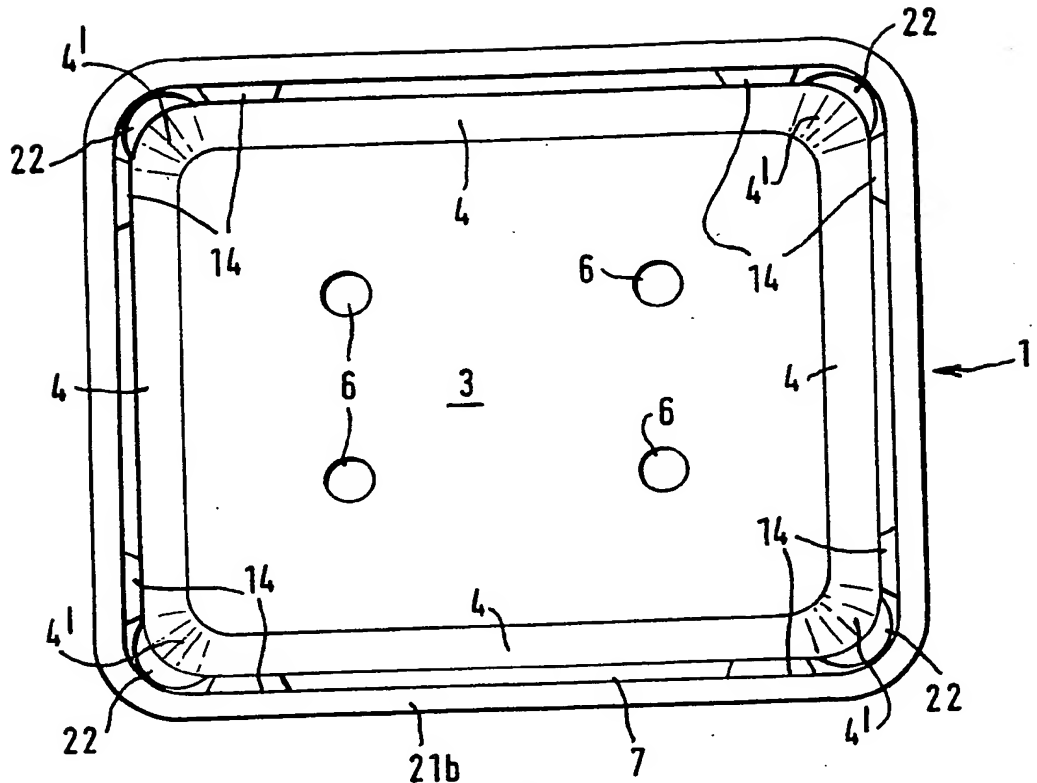


FIG. 9.

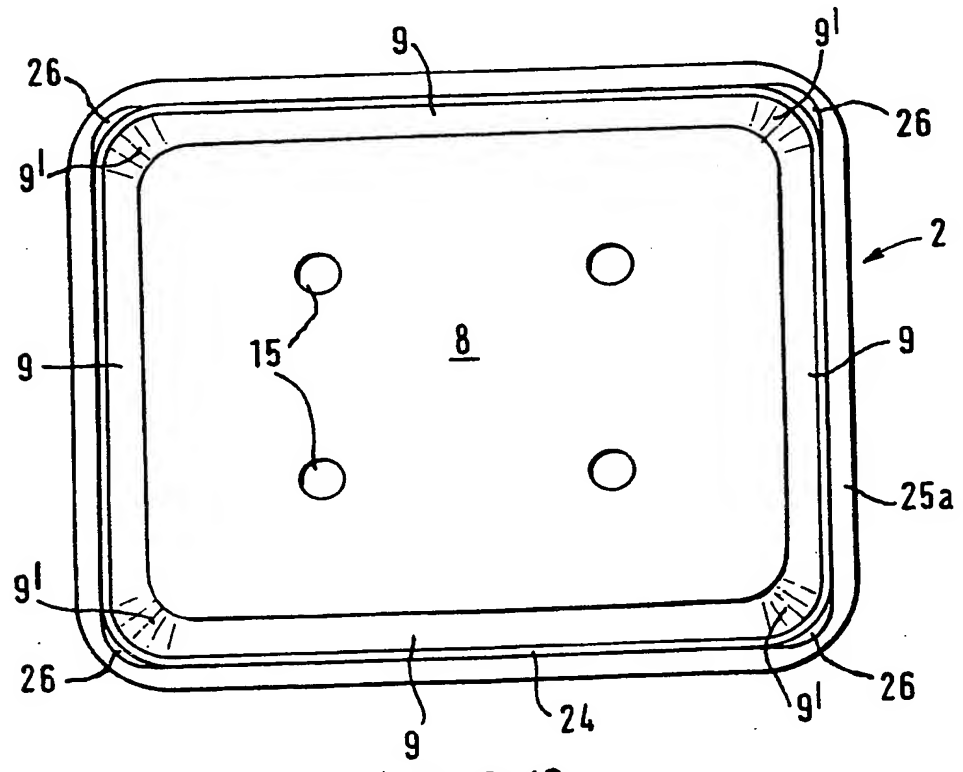


FIG. 10.

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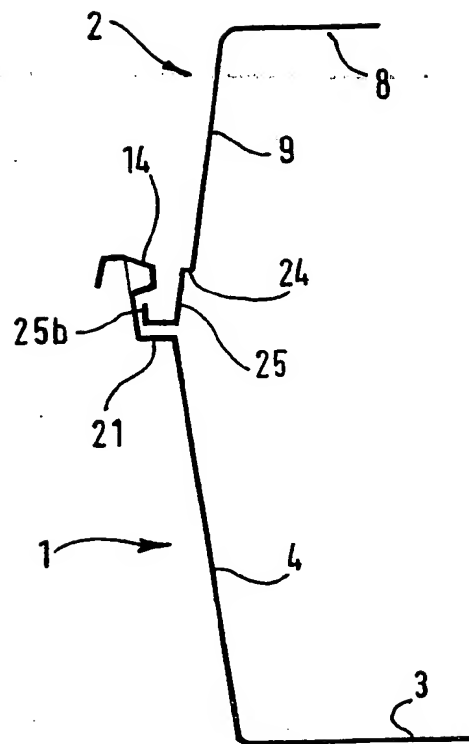


FIG. 11.

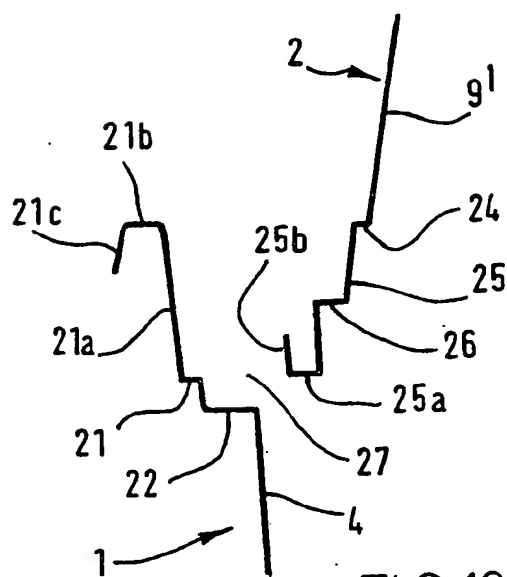


FIG. 12.



## SPECIFICATION

## Container

- 5 The present invention relates to a container particularly but not exclusively suitable for soft fruit, such as strawberries, and mushrooms.

- Soft fruit is conventionally transported and offered for sale in open-topped containers known as punnets. Although the soft fruit is usually sold by weight, shoppers like to see the fruit heaped above the rim of the punnet as this makes the punnet appear well filled. Consequently during transport such filled punnets cannot be stacked, since this would damage the fruit, and therefore have to be packed and transported as single layers. The punnets have tapered sides so that when packed as a single layer during transport, space is wasted between adjacent containers. Moreover, fruit may spill from the punnets and be lost, resulting in short weight for the customer.

- It is an object of the present invention to provide a closable container for soft fruit, which when filled with fruit can be stacked without damage to the fruit, can be packed with minimum waste of space, enables fruit in the container to be readily seen without opening the container, enables the impression of the container being heaped full of fruit to be attained and can be easily manufactured.

- In accordance with the present invention, there is provided a container, particularly for soft fruit and mushrooms, comprising an upper part and a lower part, each having a central horizontal web and side walls extending respectively downwardly and outwardly therefrom, the side walls of each part having a rigidifying rim portion, the rim portion of one said part (which latter rim portion is referred to as hereinbelow as the "inner rim portion") releasably engaging within the rim portion of the other part (which rim portion is referred to hereinbelow as the outer rim portion) to close the container, the rim portions of both parts when closed being above an imaginary horizontal median plane between the central horizontal webs of the two parts.

- The rim portions of both parts, when the container is closed are above an imaginary horizontal median plane between the central horizontal webs of the two parts. This is so that the container can be packed alongside another like container which is inverted with the outer rim portions of the two containers being one below the other, thereby reducing unoccupied space between the containers.

- Containers according to the invention, when closed, and whether upright or inverted, can be stacked one on top of another without damage to the contents of the containers.

- So that the fruit or other contents of the closed container can be seen, preferably at least the upper part of the container is transparent.

- Preferably, in the closed container, at least 20%, more preferably 25%, of the height of the container (i.e. the distance between the central horizontal webs of the upper and lower parts) is above the rim of the lower part so that the soft fruit in the container can be piled into a heap above the rim of the lower part so that the container appears to a shopper to be well filled.

- 75 Preferably, when the container is closed the side walls of the upper and lower parts are substantially contiguous with each other, there being no abrupt edges projecting into the container and which could cause damage to the contents of the container.

- To prevent condensation in the closed container, preferably ventilation openings are provided. These may be holes in the upper part and/or the lower part and/or may be gaps defined between the rim portions of the upper and lower parts when the container is closed.

- The outer rim portion may comprise a shoulder or step contiguous with the side walls of the part having said outer rim portion, the shoulder or step engaging with the inner rim portion of the other part when the container is closed. The outer rim portion may also comprise an upstanding wall or a depending skirt extending from the shoulder for surrounding and locating the rim portion of said other part when the container is closed. The wall or skirt may have protrusions or blips or an undercut for engaging the rim portion of said other part to locate that rim portion between themselves and the shoulder and to hold the upper part of the container secured to the lower part. The wall or skirt may be provided with an outwardly extending flange and/or be partly of channel-shaped section to assist in rigidifying the outer rim portion. The blips may be along the sides and/or at the corners of the container.

- The two parts of the container are preferably of substantially square or rectangular configuration, as with conventional punnets, so as to minimize wasted space between the containers when packed in one or more layers.

- If desired the lower parts alone of the containers can be used as open-topped containers.

- It may sometimes be desired to transport or display the filled closed containers as a single layer in a tray. In this case, it is desirable that the size of the tray is selected such that the containers can be packed closely abutting each other and the sides of the tray so that they are incapable of horizontal movement. However, when the lower container parts of the containers are provided with the inner rim portions, disadvantages arise if the tray is used to hold the same number of lower parts of the containers as a layer, those lower parts themselves being used as open-topped containers. Since the lower parts occupy a

smaller horizontal area than the closed containers they are capable of movement when packed in the tray.

- These disadvantages are overcome by a preferred aspect of the invention, wherein the upper part of the container is provided with the inner rim portion.

- It will be appreciated that the closed container according to this aspect of the invention occupies the horizontal area defined by the outer rim portion i.e. the rim portion of the lower part. Thus the closed container occupies the same horizontal area as the lower part of the container. Thus if a certain number of closed containers can be closely packed into a tray as a layer within the sides of the tray so that they cannot move horizontally, the same number of lower parts alone of the containers can be similarly packed into the tray.

- The invention is further described below by way of example with reference to the accompanying drawings, wherein:

*Figures 1 to 5* are views of a first container according to the invention;

- Figure 1* is a side view, partly in section, of the container when closed;

*Figure 1A* is a section along line A-A of *Fig. 1*;

- Figure 2* is a side view, partly in section, of the container when open;

*Figure 3* is an end view of the container when closed;

*Figure 4* is a plan view of the container;

- Figure 5* is an inverted plan view of the container;

*Figure 6* is a side view of an array of containers such as shown in *Figs. 1 to 5*, the containers being closed and packed in layers and stacked; and

- Figure 7* is a side view, partly in section, of a second container according to the invention, the container being shown open, i.e. with its upper and lower parts separate;

- Figure 8* is similar to *Fig. 7* but shows the second container closed;

*Figure 9* is a plan view of the lower part of the second container;

*Figure 10* is an inverted plan view of the upper part of the second container;

- Figure 11* is a diagrammatic section (on a larger scale than *Figs. 7 to 10*) through a side region of the second container when closed; and

- Figure 12* is a diagrammatic section (on a larger scale than *Fig. 11*) through a corner region of the second container when closed.

- Referring to the drawings, a container comprises a lower part 1 and an upper part 2, each pressure- or vacuum- or thermoformed from semi-rigid transparent thermoplastic sheet material. Both the lower part 1 and the upper part 2 are generally rectangular in plan.

- The lower part 1 has a central horizontal base web 3 from which extend outwardly inclined side walls 4 joined at corners 4'. At

their upper edges the side walls 4 terminate in a rim 5 comprising an outwardly flared portion 5a and an inverted channel shape portion 5b. The portions 5a and 5b can be seen in section on the left of *Fig. 2*. Ventilation holes 6 are provided in the base web 3. The lower part 2 is provided with ribs 7. The rim 5 and the ribs 7 serve both to rigidify and strengthen the lower part 2 and the ribs 7 also serve to enhance the appearance of the container.

- The upper part 2 comprises a central horizontal web 8 from which extend outwardly inclined side walls 9 joined at corners 9'. At their lower edges the side walls 9 terminate in a rim 10 which consists of a horizontal shoulder 11, a downwardly depending skirt 12 and a horizontal outwardly extending flange 13. Inwardly directed protrusions or blips 14 are formed in the skirt 12 and spaced below the shoulder 11. The shoulder 11 is interrupted at the corners of the upper part 2 by denesting formations comprising a shelf or ledge 11a above the level of the shoulder, the wall or skirt 12 extending upwardly at the corners to the shelf or ledge.

The rim 10 assists in rigidifying the upper part 2 and enhancing the appearance of the container.

- Ventilation holes 15 are provided in the web 8. Ribs 16 are formed in the side walls 9 both to rigidify and to strengthen the upper part 2 and to enhance the appearance of the container.

- The upper part 2 is fitted onto the lower part 1, in order to close the container, by first positioning the rim 5 of the lower part within the skirt 12 of the upper part and below the blips 14. Then downward pressure on the upper part causes the blips 14 to snap over the rim of the lower part. The rim 5 of the lower part 1 is then firmly held between the blips 14 and the shoulder 11 of the upper part. At the corners of the container, gaps 17 (*Fig. 5*) are defined between the rim 5 of the lower part and the shelf 11a, the gaps serving (in addition to the holes 6 and 15) for ventilation of the interior of the container.

- It will be seen from the drawings, that when the container is closed, approximately one third of the height of the container is above the rim 5 of the lower part 1.

- The container can be opened by simply pulling the upper part 2 off of the lower part 1, the blips 14 snapping over the rim 5 of the lower part.

- The container can be packed with soft fruit above the level of the rim 5 of the bottom part and thus appears to a potential buyer to be well heaped with the fruit. Moreover, the fruit although readily visible is well protected within the container when closed.

- When the container is closed the side walls 4 of the lower part 1 are substantially contiguous with the side walls 9 of the upper part 2

as shown in Fig. 1A, there being no inwardly directed projections or abrupt edges within the container which could damage fruit therein.

- 5 Containers shown in Figs. 1 to 5, when closed can be packed side-by-side as shown in Fig. 6 with alternate containers inverted so that wasted space between the containers is minimised but without damage to the contents of the container. Moreover, the containers, when closed, can be stacked one on top of another, also as shown in Fig. 6, with no damage to the contents of the container.

- 10 Referring to Figs. 7 to 12 of the drawings, the second container comprises a lower part 1 and an upper part 2, each pressure- or vacuum- or thermoformed from semi-rigid transparent thermoplastic sheet material. Both the lower part 1 and the upper part 2 are generally rectangular in plan.

- 15 The lower part 1 has a central horizontal base web 3 from which upwardly extend outwardly inclined side walls 4 joined at corners 4'. At their upper edges, the side walls 4 (including the corners 4') terminate in a rim 20 having a horizontal outwardly extending platform or shelf 21, an upwardly extending and outwardly flared wall 21a, a horizontal web 21b and a downwardly extending web or lip 21c, an inverted channel shape section being defined by the wall 21a and the webs 21b and 21c.

- 20 The wall 21a and the webs 21b and 21c can be seen in section at the left of Fig. 7. Ventilation holes 6 may be provided in the base web 3.

- 25 Inwardly directed blips on protrusions 14 are formed in the outwardly flared wall 21a and are spaced upwardly above the platform 21 so that their downwardly facing surfaces constitute an undercut.

- 30 A shelf 22 is formed at each corner of the lower part a short distance below the platform 21.

- 35 The lower part 1 is formed with wide low ribs, both on its side walls 4 and on its base webs 3, but these are not shown in the drawings for the sake of clarity.

- 40 The rim 20 and the ribs serve to rigidify and strengthen the lower part.

- 45 The upper part 2 comprises a central horizontal web 8 from which downwardly extend outwardly inclined side walls 9 joined at corners 9'. At their lower edges the side walls 9, including the corners 9', terminate in a rim 23, which consists of a horizontal shoulder 24 and an outwardly flared wall or skirt 25 having an outwardly extending web 25a and an upwardly extending web or lip 25b. The skirt 25 and the webs 25a and 25b form a channel shape section and the webs 25a and 25b constitute an outwardly extending projection.

- 50 At the corners of the skirt 25 are formed small outwardly directed denesting protrusions

26, which assist in rigidifying the corners.

Ventilation holes 15 may be provided in the web 10.

- 55 The upper part 2 is formed with wide low ribs, both on its side walls 9 and on its horizontal web 3, but these are not shown in the drawings for the sake of clarity.

- 60 The rim 23 and the ribs serve to rigidify and strengthen the upper part 2.

- 65 To close the container, the rim 23 of the upper part 2 is positioned within the rim 20 of the lower part 1. Then downward pressure on the upper part 2 causes the protrusions 14 to snap over the channel shape section of the rim 23 of the upper part 2. The webs 25a and 25b are then held firmly between the protrusions 8 and the platform 21 of the lower part. At each corner of the container, a gap 27 (see Fig. 12) is defined between the rim of the upper part and the rim 20 and shoulder 22 of the lower part, the gaps serving for ventilation of the interior of the container.

- 70 It will be seen from the drawings that when the container is closed approximately one third of the height of the container is above the rim 5 of the lower part 1.

- 75 Further, as shown in Fig. 11, when the container is closed the side walls 4 of the lower part are substantially contiguous with the side walls 9 of the upper part, there being no inwardly directed projections or abrupt edges within the container which could damage fruit therein.

- 80 Furthermore it will be appreciated that the horizontal area occupied by the lower part 1 of the container alone is the same as the horizontal area occupied by the container when closed and the lower part can be used alone, i.e. without the upper part 2, as an open-topped container.

- 85 The protrusions 14 could be replaced by a single flange extending around the inside of the rim of the lower part (and above the platform 21) to provide an undercut for engaging the rim (specifically the webs 25a and 25b) of the upper part 2.

- 90 The channel shaped section of the rim of the upper part 2 of the container provides sufficient rigidity to enable the upper part itself to be used alone, when inverted, as an open-topped container.

## CLAIMS

- 95 1. A container, particularly for soft fruit and mushrooms, comprising an upper part and a lower part, each having a central horizontal web and side walls extending respectively downwardly and upwardly therefrom, the side walls of each part having a rigidifying rim portion, the rim portion of one said part (which latter rim portion is referred to as hereinbelow as the "inner rim portion") releasably engaging within the rim portion of the other part (which rim portion is referred to

hereinbelow as the outer rim portion) to close the container, the rim portions of both parts when closed being above an imaginary horizontal median plane between the central horizontal webs of the two parts.

2. A container according to claim 1, wherein at least the upper part of the container is transparent.

3. A container according to either preceding claim, wherein, in the closed container, at least 20% of the height of the container is above the rim of the lower part.

4. A container according to claim 3, wherein, in the closed container, at least 25% of the height of the container is above the rim of the lower part.

5. A container according to any preceding claim, wherein when the container is closed the side walls of the upper and lower parts are substantially contiguous with each other, there being no abrupt edges projecting into the container.

6. A container according to any preceding claim, wherein the container when closed is provided with ventilation openings.

7. A container according to any preceding claim, wherein the ventilation openings are holes in the upper part and/or lower part and/or gaps defined between the rim portions of the upper and lower parts.

8. A container according to any preceding claim, wherein the side walls of each of the upper and lower parts are inclined outwardly in the direction away from the respective central web of the part.

9. A container according to any preceding claim, wherein the inner rim portion is at least partly of channel-shape section.

10. A container according to any preceding claim, wherein the outer rim portion comprises a shoulder or step contiguous with the side walls of the part having said outer rim portion, the shoulder or step engaging with the rim portion of the other part when the container is closed.

11. A container according to claim 10, wherein the outer rim portion comprises a depending skirt or an upstanding wall extending from the shoulder for surrounding and locating the inner rim portion when the container is closed.

12. A container according to claim 11, wherein the wall or skirt has protrusions or blips for engaging the rim portion of said other parts to locate that rim portion between themselves and the shoulder and to hold the upper parts of the container secured to the lower part.

13. A container according to claim 11 or 12, wherein the wall or skirt is provided with an outwardly extending flange and/or is partly of channel-shape section to assist in rigidifying the outer rim portion.

14. A container according to any preceding claim, wherein the two parts of the con-

tainer are of substantially square or rectangular configuration.

15. A container according to any preceding claim, wherein the lower part is provided with the inner rim portion.

16. A container according to any of claims 1 to 14, wherein the upper part is provided with the inner rim portion.

17. A container substantially as described herein with reference to and as illustrated in Figs. 1 to 6 or 7 to 12 of the accompanying drawings.

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